

In the Claims:

Please cancel currently pending Claims 1 and 23, without prejudice.

Please enter new Claims 28-124 as they appear below.

28. A method for the detection of analytes in a sample, comprising
contacting samples, containing analytes to be detected, with one or more
detection fields;
detecting the presence and/or the quantity of the analytes by an evaluation of a
physical property of the detection fields;
wherein, the detection fields comprise analyte-specific binders immobilized in
one or more of detection fields formed on at least one surface of a substrate, and are arranged
on the substrate along at least one spiral line, along one or more concentric circular lines, or
along combinations thereof; and wherein,
a material layer which aids in the evaluation of the detection fields, is applied
to the surface of the substrate.
29. The method of Claim 28, wherein radially adjacent detection fields are
arranged with radial separation around an axis of the substrate.
30. The method of Claim 28, wherein along at least one spiral line, or along one or
more concentric circular lines, adjacent detection fields are arranged with separation from
each other.
31. The method of Claim 28, wherein the substrate further comprises one or more
data fields.
32. The method of Claim 31, wherein the data fields comprise information
pertaining to samples, detection fields, the evaluation, or any combination thereof.

33. The method of Claim 31, wherein the detection fields and the data fields are arranged alternately along at least one spiral line or along one or more concentric circular lines.

34. The method of Claim 31, wherein the detection fields and the data fields are each formed on separate concentric circular lines.

35. The method of Claim 31, wherein for the formation of the data fields, the substrate further comprises recesses formed on at least one surface of the substrate; and wherein the material layer is applied in such a manner that it reaches into the recesses.

36. The method of Claim 28, wherein the material layer is arranged with separation from the substrate.

37. The method of Claim 28, wherein the analytes are detected by an immunoassay, a nucleic acid hybridization assay, a lectin-sugar assay, a protein-nucleic acid assay, or combinations thereof.

38. The method of Claim 28, wherein the evaluation is an optical evaluation of the detection fields..

39. The method of Claim 38, wherein substrate comprises an optically transparent material.

40. The method of Claim 38 wherein substrate comprises polycarbonate.

41. The method of Claim 39, wherein the material layer comprises a reflecting layer, applied after contacting the sample with the detection fields, and covering said detection fields.

42. The method of Claim 41, wherein a scanning light beam is directed through the substrate and the detection fields and, after reflection by the reflecting layer is directed back through the detection fields and the substrate, and subsequently is evaluated for detection of presence and/or quantity of the analytes in the detection fields

43. The method of Claim 39, wherein the reflecting layer comprises a metal.

44. The method of Claim 39, wherein the reflecting layer comprises aluminum.

45. The method of Claim 38, wherein the optical evaluation of the detection fields measures changes in the optical properties of the detection fields caused by isotopes, enzymes, fluorochromes, dyes, metal colloids, beads, or combinations thereof, within the detection fields.

46. The method of Claim 38, wherein the changes in the optical properties of the detection fields are caused by latex beads, plastic beads, glass beads, metal beads, or combinations thereof.

47. The method of Claim 38, wherein the substrate further comprises at least one reference field, whose optical properties are used as reference in the evaluation of the detection fields.

48. The method of Claim 38, wherein after contacting the sample with the detection fields, and before application of the material layer, a coating layer made of an optically transparent material is applied to the detection fields.

49. The method of Claim 48, wherein the coating layer is a polymer-based material.

50. The method of Claim 38, wherein for the formation of the data fields, the substrate further comprises a substance which influences incident reading light, applied on surface of the substrate which carries the detection fields.

51. The method of Claim 28, wherein the evaluation is a magnetic evaluation.

52. The method of Claim 51, wherein the material layer is a magnetic layer, applied prior to the formation of the detection fields, or after contacting the sample with the detection fields.

53. The method of Claim 52, wherein the a magnetic layer comprises magnetic particles, magnetizable particles, or combinations thereof.

54. The method of Claim 53, wherein, prior to the formation of the detection fields, or after contacting the sample with the detection fields, the magnetic layer, comprising magnetic particles, magnetizable particles, or combinations thereof, is flatly applied to at least one surface of the substrate which carries detection fields.

55. The method of Claim 51, wherein, the binders, or the analytes, are labeled with magnetic labels, magnetizable labels, or combinations thereof.

56. The method of Claim 51, wherein after contacting the sample with the detection fields, a fixation layer is applied to the detection fields.

57. The method of Claim 56, wherein the fixation layer is flatly applied on at least one surface of the substrate which carries detection fields.

58. The method of Claim 56, wherein the fixation layer comprises a polymer-based material.

59. A support for the detection of analytes in a sample, comprising;
a substrate;
detection fields formed along at least one spiral line, along one or more concentric circular lines, or along combinations thereof, on at least one surface of the substrate;
analyte-specific binders immobilized in one or more of the detection fields;
and a material layer which aids in an evaluation of a physical property of the detection fields.

60. The support of Claim 59, further comprising a fixation layer that is flatly applied over the detection fields after contacting the detection fields with a sample containing analytes.

61. The support of Claim 59, further comprising a protective layer that is flatly applied on the material layer, applied over the substrate after contacting the sample with the detection fields, or on a fixation layer, applied over the substrate after contacting the sample with the detection fields.

62. The support of Claim 61, wherein the protective layer comprise an acrylate-based material.

63. The support of Claim 59, wherein radially adjacent detection fields are arranged with radial separation around an axis of the substrate.

64. The support of Claim 59, wherein along at least one spiral line or, along one or more concentric circular lines, adjacent detection fields are arranged with separation from each other.

65. The support of Claim 59, wherein the substrate further comprises one or more data fields.

66. The support of Claim 65, wherein the data fields comprise information pertaining to samples, detection fields, the evaluation, or any combination thereof.

67. The support of Claim 65, wherein the detection fields and data fields are arranged alternately along at least one spiral line or along one or more concentric circular lines.

68. The support of Claim 65, wherein the detection fields and data fields are each formed on separate concentric circular lines.

69. The support of Claim 65, wherein for the formation of the data fields, the substrate further comprising recesses, formed on at least one surface of the substrate; and wherein the material layer is applied in such a manner that it reaches into the recesses.

70. The support of Claim 59, wherein the material layer is arranged with separation from the substrate.

71. The support of Claim 59, wherein the analytes are detected by an immunoassay, a nucleic acid hybridization assay, a lectin-sugar assay, a protein-nucleic acid assay, or combinations thereof.

72. The support of Claim 59, wherein the evaluation is an optical evaluation of the detection fields.

73. The support of Claim 59, wherein the material layer comprises a reflecting layer, applied after contacting the sample with the detection fields and covering said detection fields.

74. The support of Claim 73, wherein the reflecting layer comprises a metal.

75. The support of Claim 73, wherein the reflecting layer comprises aluminum.

76. The support of Claim 72, wherein the optical evaluation of the detection fields measures changes in the optical properties of the detection fields caused by isotopes, enzymes, fluorochromes, dyes, metal colloids, beads, or combinations thereof, within the detection fields.

77. The support of Claim 76, wherein the changes in the optical properties of the detection fields are caused by latex beads, plastic beads, glass beads, metal beads, or combinations thereof.

78. The support of Claim 72, wherein the substrate further comprising at least one reference field, whose optical properties are used as reference in the evaluation of the detection fields.

79. The support of Claim 72, further comprising a coating layer made of an optically transparent material, applied on the detection fields after contacting the sample with the detection fields, and before application of the material layer,

80. The support of Claim 79, wherein the coating layer is a polymer-based material.

81. The support of Claim 72, wherein substrate comprises an optically transparent material.

82. The support of Claim 72, wherein substrate comprises polycarbonate.

83. The support of Claim 72, wherein for the formation of the data fields, the substrate further comprises a substance which influences incident reading light, applied on surface of the substrate which carries the detection fields.

84. The support of Claim 59, wherein the evaluation is a magnetic evaluation.

85. The support of Claim 59, wherein the material layer is a magnetic layer, applied prior to the formation of the detection fields, or after a contact of the sample with the detection fields.

86. The support of Claim 85, wherein the a magnetic layer comprises magnetic particles, magnetizable particles, or combinations thereof.

87. The support of Claim 86, wherein prior to the formation of the detection fields, or after a contact of the sample with the detection fields, the magnetic layer, comprising magnetic particles, magnetizable particles, or combinations thereof, is flatly applied on at least one surface of the substrate which carries detection fields.

88. The support of Claim 84, wherein, the binders or the analytes are labeled with magnetic labels, magnetizable labels, or combinations thereof.

89. The support of Claim 84, further comprising a fixation layer, applied to the detection fields after contacting the sample with the detection fields.

90. The support of Claim 89, wherein the fixation layer is flatly applied on at least one surface of the substrate which carries detection fields.

91. The support of Claim 89, wherein the fixation layer comprises a polymer-based material.

92. A method of making a support for the detection of analytes in a sample, comprising;

forming detection fields along at least one spiral line, along one or more concentric circular lines, or along combinations thereof, on at least one surface of a substrate;
immobilizing analyte-specific binders in one or more of the detection fields;
and applying a material layer which aids in an evaluation of a physical property of the detection fields.

93. The method of Claim 92, wherein the support further comprises a fixation layer that is flatly applied over the detection fields after contacting the detection fields with a sample containing analytes.

94. The method of Claim 92, wherein the support further comprises a protective layer that is flatly applied on the material layer, applied over the substrate after contacting the sample with the detection fields, or on a fixation layer, applied over the substrate after contacting the sample with the detection fields.

95. The method of Claim 94, wherein the protective layer comprises an acrylate-based material.

96. The method of Claim 92, wherein radially adjacent detection fields are arranged with radial separation around an axis of the substrate.

97. The method of Claim 92, wherein along at least one spiral line, or along one or more concentric circular lines, adjacent detection fields are arranged with separation from each other.

98. The method of Claim 92, wherein the substrate further comprises one or more data fields.

99. The method of Claim 98, wherein the data fields comprise information pertaining to samples, detection fields, the evaluation, or any combination thereof.

100. The method of Claim 98, wherein the detection fields and the data fields are arranged alternately along at least one spiral line or along one or more concentric circular lines.

101. The method of Claim 98, wherein the detection fields and the data fields are each formed on separate concentric circular lines.

102. The method of Claim 98, wherein for the formation of the data fields, the substrate further comprises recesses formed on at least one surface of the substrate; and wherein the material layer is applied in such a manner that it reaches into the recesses.

103. The method of Claim 92, wherein the material layer is arranged with separation from the substrate.

104. The method of Claim 92, wherein the analytes are detected by an immunoassay, a nucleic acid hybridization assay, a lectin-sugar assay, a protein-nucleic acid assay, or combinations thereof.

105. The method of Claim 92, wherein the evaluation is an optical evaluation of the detection fields.

106. The method of Claim 92, wherein the material layer comprises a reflecting layer, applied after a contact of the sample with the detection fields and covering said detection fields.

107. The method of Claim 106, wherein the reflecting layer comprises a metal.

108. The method of Claim 106, wherein the reflecting layer comprises aluminum.

109. The method of Claim 105, wherein the optical evaluation of the detection fields measures changes in the optical properties of the detection fields caused by isotopes, enzymes, fluorochromes, dyes, metal colloids, beads, or combinations thereof, within the detection fields.

110. The method of Claim 109, wherein the changes in the optical properties of the detection fields is caused by latex beads, plastic beads, glass beads, metal beads, or combinations thereof.

111. The method of Claim 105, wherein the substrate further comprises at least one reference field, whose optical properties are used as reference in the evaluation of the detection fields.

112. The method of Claim 105, wherein the support further comprises a coating layer made of an optically transparent material, applied on the detection fields after contacting the sample with the detection fields, and before application of the material layer.

113. The method of Claim 112, wherein the coating layer is a polymer-based material.

114. The method of Claim 105, wherein substrate comprises an optically transparent material.

115. The method of Claim 105, wherein substrate comprises polycarbonate.

116. The method of Claim 105, wherein for the formation of the data fields, the substrate further comprises a substance which influences incident reading light, applied on surface of the substrate which carries the detection fields.

117. The method of Claim 92, wherein the evaluation is a magnetic evaluation.

118. The method of Claim 117, wherein the material layer is a magnetic layer, applied prior to the formation of the detection fields, or after a contact of the sample with the detection fields.

119. The method of Claim 118, wherein the a magnetic layer comprises magnetic particles, magnetizable particles, or combinations thereof.

120. The method of Claim 119, wherein prior to the formation of the detection fields, or after a contact of the sample with the detection fields, the magnetic layer, comprising magnetic particles, magnetizable particles, or combinations thereof, is flatly applied on at least one surface of the substrate which carries detection fields.

121. The method of Claim 117, wherein, the binders or the analytes are labeled with magnetic labels, magnetizable labels, or combinations thereof.

122. The method of Claim 117, wherein after a contact of the sample with the detection fields, a fixation layer is applied to the detection fields.

123. The method of Claim 122, wherein the fixation layer is flatly applied on at least one surface of the substrate which carries detection fields.

124. The method of Claim 122, wherein the fixation layer comprises a polymer-based material.
